

Evaluation of Oat Lines for Forage Production in Tropical/Sub-tropical Region

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Oat (*Avena sativa* L.) is a popular forage crop which can be grazed, cut-and-carried, made into hay, silage or haylage. Oats can be effectively grown as forage during winter in tropical/sub-tropical regions although not much forage oat production and research have been conducted in such a region in the Northern Hemisphere. Taiwan lies on the Tropics of Cancer (between 21.7° and 25.3°N) with a mix of tropical and sub-tropical climate in the plain and temperate condition at the mountainous regions, therefore suitable for forage oat research. We have introduced diverse oat lines through Quaker International Oat Nursery into Taiwan since 2015. After a first year seed multiplication and preliminary observations, we have selected six oat lines to test for their forage potential across Taiwan, covering different climate and soil types. A classic randomized complete block design has been conducted in autumn 2016 and autumn 2017 at three and four locations, respectively. Days to heading, plant height, and dry matter yield were evaluated. Adjusted average dry matter yield per hectare is between nine to twelve tons according to the genotype and could reach as high as 16 tons per hectare depending on the location. This two-year evaluation showed the potential of oat as winter forage in Taiwan and we expect the result will encourage other tropical/sub-tropical countries to consider oat as a local forage option to substitute a part of imported forage.